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REPORT NO.

COUNTRY USSR (Estonia)

SUBJECT Kohtla Järve Oil Shale Processing Plant

PLACE
ACQUIRED [REDACTED]

DATE
ACQUIRED BY SOURCE [REDACTED]

DATE OF INFORMATION: [REDACTED]

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SOURCE [REDACTED]

Location

1. [REDACTED]

The plant is located on a road which runs parallel to the main route from Leningrad to Tallin. When the Soviets invaded Estonia in 1940, their tanks traversed this road from east to west. The plant is located approximately 40 miles west of Narva and about the same distance east of Rakvere.

Shale Mining

2. The oil shale processed at the plant was mined in the immediate area. The shafts ran directly under the plant. [REDACTED] the open pit operations had been abandoned, and all the mining operations were underground. I do not know how many miners were employed or any details of mining methods. The abandoned open pits were located about two miles northwest of the plant.

Housing and Office Buildings

3. The executive homes [See Enclosure (A)] were three-storied. They were in rows of five on three streets. The director, chief chemist, and doctor each occupied an entire dwelling. The rest of the houses were divided into three-room apartments, one apartment on each floor. I do not recall any details of the construction of these houses. [REDACTED] He was responsible for operations and sales, both domestic and export. I do not recall any details of the workers' barracks since I never visited them. [See Enclosure (A)]. Both the plant workers and miners

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lived there. The executive homes and the worker's barracks were about one half mile from the plant. We either walked or used our bicycles to travel between them. The office building [See Enclosure (A)] was a frame two-story building, very barn-like in appearance. Its dimensions were approximately 40'x180'. It was situated in a lower-lying area and its roof was level with the road. The restaurant was a one-story frame building slightly larger than the office building. Actually it was more of a community house. Movies and plays were shown there. It was open to everybody. The restaurant was on the south side of the building and was cafeteria style. Very few plant personnel ate there.

Highways

4. The highway was a two-lane dirt road. It was an experimental road impregnated with an oil from the plant, then rolled.

Plant

5. The plant itself was surrounded by an eight-foot cyclone chain-link fence. We entered the plant through the main gate, showed our passes to the watchman, and left our bicycles. The generator building was about 20' square and 25' in height, constructed of concrete with a flat roof. The waste gases obtained during the shale processing were used to move the generators. I never visited this building.
6. In each of the oil treatment buildings there were four distilling towers about 30-40 feet high. The shale was transported to the top of the buildings by a conveyor and dumped into the towers. It was so controlled that a certain amount of shale fell into the fire at the bottom and was used as fuel for the removal of the oil from the other shale. The fuel produced was led off in pipes to the reservoirs. These three buildings had four stories and were 60-80' high. The walls were built of heavy stone and each story was supported by heavy steel beams. They were rather old fashioned in appearance although built about 1920. Building I-1 [See Enclosure (A)] contained two cylindrical open vats, about 12' in diameter and six feet high. I would estimate their capacity at 500 cubic ft. The oils in these tanks were treated with sodium hydroxide for reasons unknown to me. [] the Estonian government was laying foundations for a fourth shale treatment building. I have heard that the Soviets completed the building during their 1940-41 occupation.

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Products

7. I would estimate the plant had 400-500 production workers. There were five female technicians in the production control laboratory and five chemists in the research lab. These facilities were located in Building I-2. The crude produced could be fractionated to gasoline [boiling 40°-60°/- 5%]; petroleum ether [boiling 60°-120°/- 10%]; kerosene [boiling 120°-180°/- 70%]; waxes and residuals-15%. The kerosene was subjected to cracking in Building H [see Enclosures (A)]. This building was completely overshadowed by the shale treatment buildings.
8. The oil produced was not composed of saturated hydrocarbons; a great part of it was phenolic in origin. The emphasis was placed on kerosene [boiling 120° - 180°/- 70%]. The gasoline produced was definitely of a much lower quality than imported gasoline which consisted for the most part of saturated hydrocarbons. Combustion was not complete since the gasoline contained sulphur and gave off SO₂ fumes. There were no foreign elements present other than sulphur. The best gasoline produced was about 70 octane.
9. All the products were packed into drums of about 50-60 gallon capacity. There was a small engine in the yard to shift cars. I do not know whether there was a railroad siding or whether products were trucked to the railroad station.

Wartime Status

10. I have heard that the plant was damaged by the Germans when they retreated but that it has been rebuilt and expanded by the Soviets. I believe that production could be increased four-fold from the highest production under the

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Estonian republic by the introduction of better refining techniques. I have no figures, however, on actual Estonian production.

11. The most outstanding land mark of the plant was the huge ash pile See Enclosure (A) which was 500-600 feet high and would be visible from either the air or sea.

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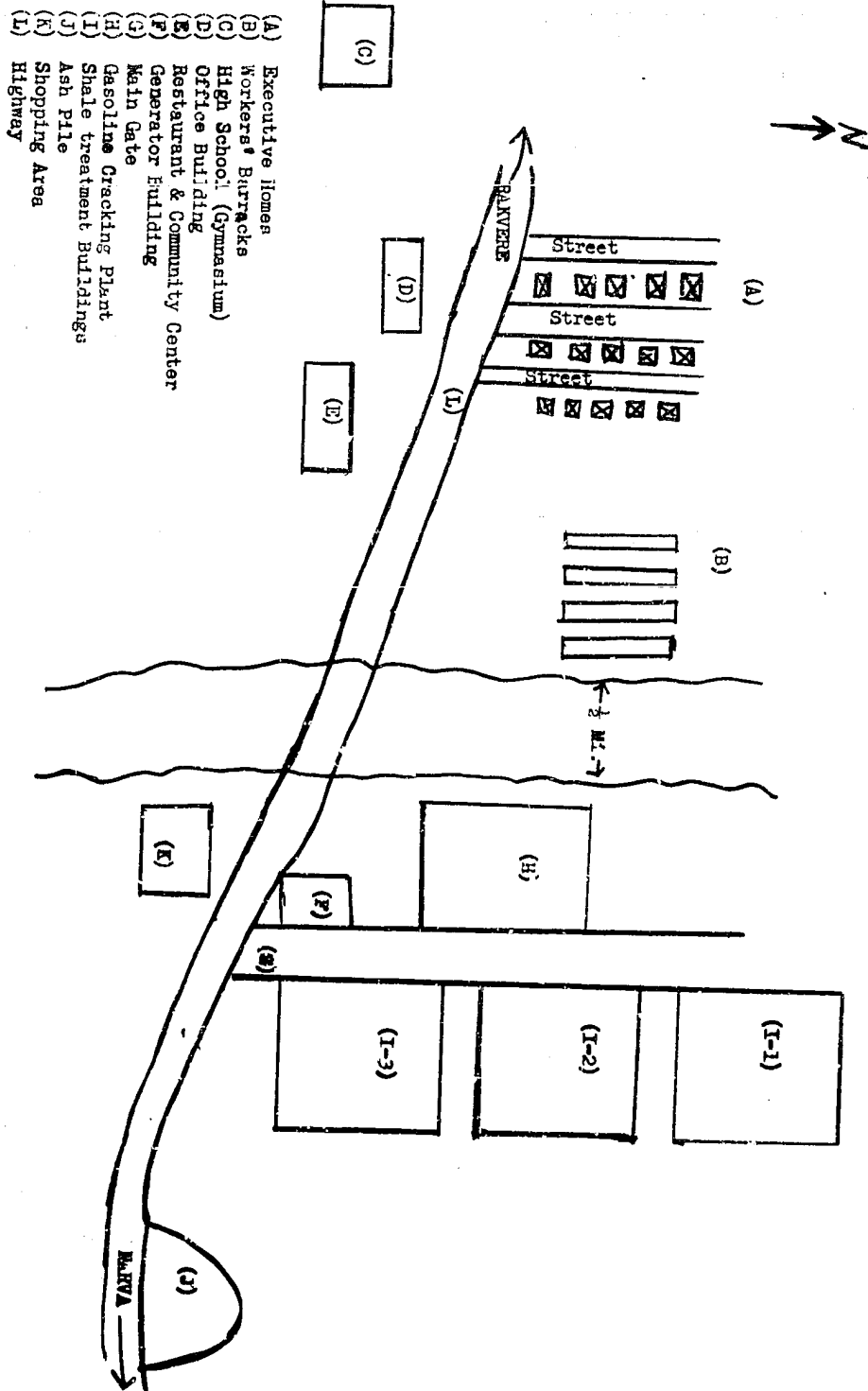
ENCLOSURE (A): Rough sketch of Kohtla Järve Shale Oil Processing Plant.

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ENCLOSURE (A)

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